

Serial No.: 10/725,242
Amendment Dated: March 20, 2006
Reply to Office Action of December 5, 2005

REMARKS

A Request for a One (1) Month Extension of Time pursuant to 37 CFR

§1.136(a) and (b) is attached hereto.

The above-captioned patent application has been carefully reviewed in light of the non-final Office Action to which this Amendment is responsive. Claims 1 and 2 have been amended in an effort to further clarify and particularly point out the present invention. In addition, the specification has been amended to correct an informality noted by the Examiner and a Replacement Sheet indicating a proposed red-lined drawing change to Fig. 2 is attached for the Examiner's review. To that end, no new matter has been added.

Claims 1-5 are pending. Each of the pending claims have been rejected based on certain prior art. In particular, Claim 1 has been rejected under 35 USC §103(a) as being unpatentable based on the combination of Abels (DE 10118442) in view of Knight et al. (U.S. Patent No. 4,364,449) and Schramm et al. (U.S. Patent No. 6,270,420B1), Claim 2 has been rejected under 35 USC §103(a) as being unpatentable over Abels in view of Ishikawa et al (U.S. Patent No. 6,179,304B1) and Schramm et al, Claim 3 has been rejected under 35 USC §103(a) as being unpatentable over Abels in view of Ishikawa et al. and Schramm et al. and further in view of Claxton (U.S. Patent No. 5,997,013) and Claims 4 and 5 have been rejected under 35 USC §103(a) as being unpatentable over Abels in view of Ishikawa et al. and Schramm et al, and further in view of Claxton, Wielenga (U.S. Patent No. 6,065,558) and Knight et al. The Examiner has also rejected Claims 1-5 under 35 USC §112, for indefiniteness and has objected to the drawings and specification. Applicant respectfully requests reconsideration based on the amended claims and the following discussion.

In order to maintain a "*prima facie*" obviousness rejection under the Patent Statute, each and every essential claimed limitation must be found in or suggested by the cited art, either singly or in combination. Those limitations that are found in or are suggested by the prior art must be notoriously well known in the field of the invention to one of sufficient (i.e., ordinary) skill at the time of the invention. The

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motivation to combine references must be found in the prior art as a whole, without undue experimentation, and wherein each of the references must be read in their entirety. To that end, there should not be a piecemeal combination of features based on impermissible hindsight (i.e., advance knowledge) of the claimed invention.

The present invention relates to a four-wheel industrial truck having a swing axle for the rear wheels. The truck further includes a drive for the wheels and a control device for the drive that generates an actuating signal in response to a generator signal. Stops are provided on the body work of the industrial truck that cooperate with the body of the swing axle. According to one version of the invention, a switch is arranged on the axle stop of the swing axle. In another version, a rotary pulse generator is arranged in the plane of rotation of the swing axle. Depending on the version, the switch and the rotary pulse generator are each coupled to the control device in order to reduce the drive torque of the drive when the switch is actuated in the first noted version through contact of the switch with the body of the swing axle or when the signal of the signal pulse generator reaches a predetermined value according to the other version. In either case, the torque of the truck is reduced through the power control of the truck. The goal of the application is to provide a control to the drive torque of the wheel drive when instability occurs due to cornering of the truck.

Turning to the cited art, Abels also relates to a truck having a swing axle. As noted in the Background portion of the present application, this reference includes a sensor that is included on the vehicle frame or bodywork that senses the distance of the vehicle frame relative to the swing axle. When the distance reaches a predetermined value, an alerting signal is generated. The sensor of this cited reference is a non-contacting sensor such as an optical, inductive, or acoustic form of sensor.

It is believed that Abels is significantly different than that presently claimed by Applicant. First, the sensor of Abels fails to provide a signal that controls the drive torque of the drive. The sensor of this cited reference merely provides an alerting signal when the distance between the axle and the sensor reaches a predetermined threshold. That is to say, the sensor of Abels is not coupled to the drive of the truck in order to reduce the drive torque of the drive when the sensor is actuated. To that end, Applicant disagrees with the Examiner's characterization of Abels.

In addition, the sensor of Abels is related to a non-contacting form of sensor wherein the present invention relies upon the switch being actuated; that is, actually being contacted by the body of the axle. That is, the present invention relies upon direct contact between a switch and the body of the swing axle indicative of excessive movement of the body work of the industrial truck. The switch is a relatively inexpensive, yet effective means for controlling the motor torque. Moreover, a switch utilizes only two positions; namely, an open position and a closed position wherein a sensor requires a signal that varies based upon the axles approach to the stop means. Again, the Abels reference is merely intended to provide an alerting feature and not a control feature based on the output of the switch, which must be actuated, i.e., contacted, to initiate a control signal. No alerting signal per sé is generated. Claim 1 has been amended to more definitely recite that the switch must be contacted for actuation in order for the control signal to be generated. No new matter has been added.

The Examiner has applied Knight et al. for the proposition that the sensor of Abels can be replaced by the switch described by Knight et al. Applicant does not agree. Arguably, Knight et al. relates to an industrial truck that employs a switch in order to control the power of a truck. However, a careful reading of this applied reference indicates that this switch is not influenced by the inclination of the truck body relative to a swing axis. Rather, the switch of Knight et al is activated only if one of the wheels has a steering angle that endangers the driving behavior of the truck. To that end, the switches described by Knight et al. are provided in relation to

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the steering linkage or other component (i.e., cylinder) of the power steering unit. Therefore, Knight et al. relates merely to the control of the steering of the wheels of a truck, while the present invention on the other hand relates to control the inclination of a truck body in order to achieve stable positions. Therefore, one of ordinary skill in the field of the invention would not suggest by Knight et al. to provide a switch between the body of the truck and the swing axle in order to control the torque of the engine of a truck.

The Examiner has further applied Schramm et al. with regard to Claim 1. This secondary reference does relate to a device for detecting motor vehicle tilt, but does not in any way relate to a truck having a swing axis. Rather, this reference (like Knight et al.) relates to the control of the position of wheels of a truck in order to influence the torque. This reference utilizes a different technique arrived at through description of a variable that is related to wheel rotation speed.

It is believed that the interposition of the switch of Knight et al. would not have been considered by one of ordinary skill in the field into the teachings of Abels wherein the latter, taken in its entirety, relates merely to an alerting device predicated on a distance relationship between the sensor and swing axle and not reliant upon contact therebetween to actuate a control signal to control drive torque for the truck. Arguably, the use of a non-contacting sensor is not designed specifically for contact between two devices but rather is provided to define a field (inductive, optical, etc,) between two surfaces. As noted above, the present invention does not at all relate to alerting the user, but rather to providing a means for controlling drive torque based on the inclination of the truck body beyond the stops of the swing axle of a four wheel industrial truck. The introduction of Schramm et al. is also believed to be flawed for similar reasons in that neither Schramm et al. nor Knight et al. relate to swing axles and axle stops in relation to a bodywork. Each of the foregoing are concerned with interrelations between power control and steering mechanisms. Therefore, it is believed Claim 1, as amended, is patentably distinct over the cited references and reconsideration is respectfully requested.

With regard to Claim 2, the applicability of Abels has already been discussed above. This primary reference describes a non-contacting sensor that is used to alert the user when a predetermined distance between the sensor and the body of the swing axle is achieved. This reference teaches nothing further, meaning this reference fails to describe any relation between the swing axle and the body of the truck in terms of a control device that is somehow actuated based upon a predetermined inclination of the truck body to control the drive torque of the truck.

Schramm et al. has also been previously discussed and relates to a device for detecting motor vehicle tilt. This device and related method, however, does not in any way relate to a truck that includes a swing axis or in any way relates to the position of the truck body in relation to the swing axis. Rather, this reference relates to the control of the position of wheels of a truck in order to influence the torque. This reference utilizes a different technique arrived at through description of a variable that is related to wheel rotation speed. It is not understood, reviewing the references in their entirety, how a combination would be readily apparent to one of ordinary skill in the field of the invention without advance knowledge of the invention.

The Examiner has cited Ishikawa et al. for the inclusion of a rotary pulse generator. This reference does describe the use of a rear axis sensor in use with a locking mechanism that locks the rear axle when the weight of the rear axle exceed a predetermined weight. The locking mechanism is used to restrict pivoting so as to stabilize the frame of the industrial vehicle. A description of the entirety of the mechanism is provided, for example, at col. 2, line 57- col. 3, line 8. Nowhere in this discussion is there any discussion or relation to a control mechanism with regard to drive torque of the vehicle based upon tilt of the vehicle. All that is discussed is a restriction of additional tilting of the axle based on the tilt having already exceeded a predetermined value and further based on the weight level being carried by the vehicle. It is not understood, to that end, how the latter reference would be consulted, reviewing same in its entirety, for the proposition of using a rotary pulse generator according to Claim 2 without advance knowledge of the invention. That

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is, it is not understood where one of ordinary skill in the field would understand the substitution of features as opined by the Examiner based on the cited references, reading these references at the time of the invention. To that end, it is believed that such a combination would not be possible and therefore a *prima facie* case of obviousness cannot be made under the Statute. Reconsideration is respectfully requested.

With regard to the rejections of Claims 3-5, based additionally on the references of Claxton, Knight et al, and Wielenga, it is believed that these claims are patentably distinct for the same reasons pertaining to Claim 2, noted above. That is, it is believed the combination of Abels, Schramm et al. and Ishikawa et al would not have been apparent to one of ordinary skill in the field of the invention at the time thereof. As noted above, Abels relates to an alerting device and not a control device wherein Schramm et al relates to a control device that relates based on the steering control of an industrial truck and not due to body inclination as detected from a swing axis, such as by cornering. Ishikawa et al. includes a tilt sensor but this sensor merely is connected to a system that prevents tilt based on the load being carried by the truck and not motor control based on excessive tilt of the body. For these reasons, it is believed the cited references cannot be combined to render Claim 2 obvious under the Statute. The recitation of Knight et al has also been previously discussed infra wherein this reference discloses a means for motor control but based on the change in angle of a steering wheel. This reference does not include the recitation of a swing axis or similar structure wherein the inclination of the truck body is determined prior to control of the torque of the truck. Neither Claxton nor Wielenga provide disclosure or the suggestion wherein the bodywork of the industrial truck cooperates with the body of the swing axle of the industrial truck such that the rotary pulse generator arranged in the plane of rotation of the swing axle can provide a signal to control the drive torque of the truck when the signal of the generator reaches a predetermined value based on the inclination of the swing axis relative to the truck body – that is, at a point in which the axle stop touches the axle body.

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Because Claim 2 is believed to be patentably distinct over each of the above-noted references, it is believed that Claims 3-5 are also allowable for the same reasons. Therefore, reconsideration is respectfully requested.

Claims 2-5 have also been rejected under 35 USC §112, second paragraph, for indefiniteness. Applicant has amended Claim 2 to correct the noted antecedent basis discrepancy and Claim 1 has been amended to correct the typographical error that was highlighted by the Examiner. It is believed the claims now particularly point out and distinctly claim the subject matter that Applicant regards as the invention. To that end, it is believed this rejection should be withdrawn.

Applicant has now also amended page 3 of the present specification to remove the specific reference to a numbered claim, as noted by the Examiner. Withdrawal of this objection is now respectfully requested.

Finally, a proposed red-lined version of Figure 2 is herein attached pursuant to 37 CFR §1.121(d), adding a missing reference numeral for the drive axle 20. Support is found in Figure 1. To that end, it is believed no new matter has been added. Formal versions will be provided upon favorable consideration by the Examiner. Entry is respectfully requested.

In summary, it is believed the above-captioned patent application is now in an allowable condition and such allowance is earnestly solicited.

If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicant's representative at the telephone number below.

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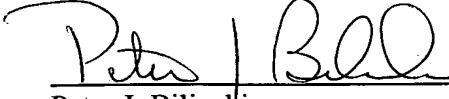
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The Director is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS:

Attachment: Replacement Sheet Showing a Proposed Red-Lined Change to Fig. 2
for Examiner's Review.